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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,546	03/29/2004	Seiichi Mizukoshi	86825RLO	3435

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EXAMINER

SITTA, GRANT

ART UNIT	PAPER NUMBER
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2629

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07/01/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/812,546	Applicant(s) MIZUKOSHI ET AL.	
	Examiner GRANT D. SITTA	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 March 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5,6 and 8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5,6 and 8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 May 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1, 2 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abe et al (2003/0122759) hereafter, Abe in view of Sekiya et al (6,583,775) hereinafter Sekiya.

4. In regards to claim 1, Abe teaches a display device, comprising:
a matrix OLED display panel for receiving image data [0099], the panel having a plurality of pixels, each pixel having an OLED element ([0099])
means for supplying setting values (Examiner is interpreting "setting values" to mean "value supplied into integration part 200) for contrast and brightness (fig. 1A-C (305) [0070]) wherein such setting values are separate from the image data to the OLED display panel (fig. 26 line exiting into (200)) Examiner notes that the "means for supplying setting values" are separate from the image data;

the matrix OLED [0099] display panel including display setting circuitry (fig. 1A (304-306) including a multiplier (fig. 26 (22)) and an adder (fig. 26 (12)) for setting a relationship between image data and current values for current flowing in all OLED elements [0099] in response to the supplied contrast and brightness setting values ([0070] “a detection circuit for detecting luminance information of input image data, and 306A is a control circuit for carrying out a drive control in accordance with the detected luminance information”) and the supplied image data ([0070] “a detection circuit for detecting luminance information of input image data, and 306A is a control circuit for carrying out a drive control in accordance with the detected luminance information”);

estimation circuitry for estimating total panel (fig. 26 200 Since 200 is using Ra, Ga, and Ba it is using the total panel current) current flowing in all of the plurality of pixels when carrying out display for the display panel based on the image data ((fig. 26 (200 and 201) “In the above-described FIG. 26, 200 designates an integration part (integration unit) for integrating 1 frame portion of the image data as the luminance desired value, and 201 designates a multiplier. This integration part 200 and the multiplier 201 are the high voltage power supply current value calculation circuit as a unit for calculating a current value (I_a) of the high voltage power supply from the image data” (463)); and

current control circuitry (fig. 26 (ABL Circuitry)) for controlling actual panel current (fig. 26 I_a and I_{max}) by correcting the supplied contrast or brightness (abstract “luminance”) setting values (“input image data” in [0070]) based on the panel current estimated by the estimation circuitry (fig. 26 (200 and 201)), so that the actual panel

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current does not exceed a selected maximum value (fig. 26 (202) [0474] “designates a register which stores the limit value (I_{\max}) of the high voltage current”).

Abe differs from the claimed invention in that Abe does not disclose an active-matrix OLED display panel for receiving image data, the panel having a plurality of pixels, each pixel having an OLED element;

However, Sekiya teaches a system and method for an active-matrix OLED display panel for receiving image data, the panel having a plurality of pixels, each pixel having an OLED element; (fig. 10, fig. 11 and col. 1-2, lines 40-15 of Sekiya).

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify the matrix OLED of Abe to become an active-matrix OLED display panel for receiving image data, the panel having a plurality of pixels, each pixel having an OLED element as taught by Sekiya in order to allow for more control of each pixel and to provide for brighter sharper displays over passive matrix displays.

5. In regards to claim 2, Abe teaches the display device of claim 1, wherein, when the total panel current estimated by the estimation means does not exceed a specified set value, correction of contrast or brightness by the current control circuitry is not effected ([0470] if the gain is equal to 1, i.e. G_1 is 1, correction of contrast or brightness by the current control circuitry will not be effected).

6. In regards to claim 8, Abe teaches the display device of claim 1, wherein the estimation means estimates total current based on the sum or average of image data

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for a single image frame or a plurality of image frames ([0468] average current within time assuming that 1 frame is set as the unit time”).

Allowable Subject Matter

7. Claims 5 and 6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter: The cited references has failed to teach applicant's claimed invention.

5.(Currently Amended) The display device of claim 1,

wherein the current control circuitry controls contrast based on the following equation:

$$C' = C - (C + B / (k \cdot Lw0) - a) * (Ical - Icalx) / (Imax - Icalx),$$

where C is contrast setting value, B is brightness setting value, Lw0 is maximum luminance at initial setting time (C=1, B=0), a is luminance at the time panel current becomes IMax, when displaying a totally white surface, divided by Lwo, Ical is panel current when subjecting original image data values to linear conversion, Imax is maximum current flowing in the panel, Icalx is the Ical value (can be arbitrarily set) for the point at which maximum luminance begins to lower, and k is gamma correction input data divided by luminance.

6.(Currently Amended) The display device according to claim 1, wherein the estimation circuitry estimates panel current based on the following equation:

$$I = R_{\text{frame}}/E_r + G_{\text{frame}}/E_g + B_{\text{frame}}/E_b,$$

where, R_{frame} is the sum total of R pixel data for one frame, G_{frame} is the sum total of G pixel data for one frame, B_{frame} is the sum total of B pixel data for one frame, E_r is R luminance divided by current flowing in one R pixel, E_g is G luminance divided by current flowing in one G pixel, and E_b is B luminance divided by current flowing in one B pixel, wherein R, G, and B respectively means to Red, Green and Blue.

Response to Arguments

9. Applicant's arguments filed 3/11/2008 have been fully considered but they are not persuasive.

10. In response to Applicant's remarks that the setting values must be provided separately from the image data, not derived from the image data (Remarks, pg 4, last ¶). Examiner respectfully disagrees. Abe states, "[0463] [i]n the above-described FIG. 26, 200 designates an integration part (integration unit) for integrating 1 frame portion of the image data as the luminance desired value, and 201 designates a multiplier." The multiplier is the coefficient that supplies the contrast and brightness. The means for supplying the setting values are separate from the image data. While, the multiplier, or

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coefficient, of Abe may be derived from the image data the current claim language does not require the setting values to not be derived from the image data.

11. In response to Applicant's remarks that, "[a]s previously pointed out in the amendment dated Nov. 19, 2007, Applicants assume that the Abe device is a plasma device. At the outset, Abe is passive-matrix and not OLED." (Remarks, pg 5, 3 ¶). Examiner respectfully disagrees with regards to the display being an OLED. Abe states, "[0099] It is desirable that the display device is an electron-emitting device which can emit electrons in compliance with the drive voltage to be applied, an EL (electroluminescence) device having a light-emitting object as represented by an **organic EL** and an inorganic EL or a **LED** device." (emphasis added).

Examiner agrees that Abe does not expressly mention using an active matrix display. However, Sekiya was relied upon to teach an active matrix display. Passive matrix displays divide a signal to address entire rows or columns. Active matrix display can individually address each pixel. Since Abe teaches a detection means (305), control circuitry (306c) and compensation circuit(304) (fig. 1c). The signal of Abe is compensated before reaching the actually driving means (fig. 1 c (302) or (303)).

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify the matrix OLED of Abe to become an active-matrix OLED display panel for receiving image data, the panel having a plurality of pixels, each pixel having an OLED element as taught by Sekiya in order to allow for more control of each pixel and to provide for brighter sharper displays over passive matrix displays.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kawashima et al (7,093,941)

Ishizuka et al (6,806,852)

Moore et al (4,799,106)

Blankevoort et al (5,345,277)

Okada et al (4,489,349)

Lee et al (5,166,795)

Leyvi et al (2004/0021671)

Morimura et al (5,760,843)

Okamoto et al (2001/0035850)

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GRANT D. SITTA whose telephone number is (571)270-1542. The examiner can normally be reached on M-F 9-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on 571-272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sumati Lefkowitz/
Supervisory Patent Examiner, Art Unit 2629

/Grant D Sitta/
Examiner, Art Unit 2629
June 23, 2009